



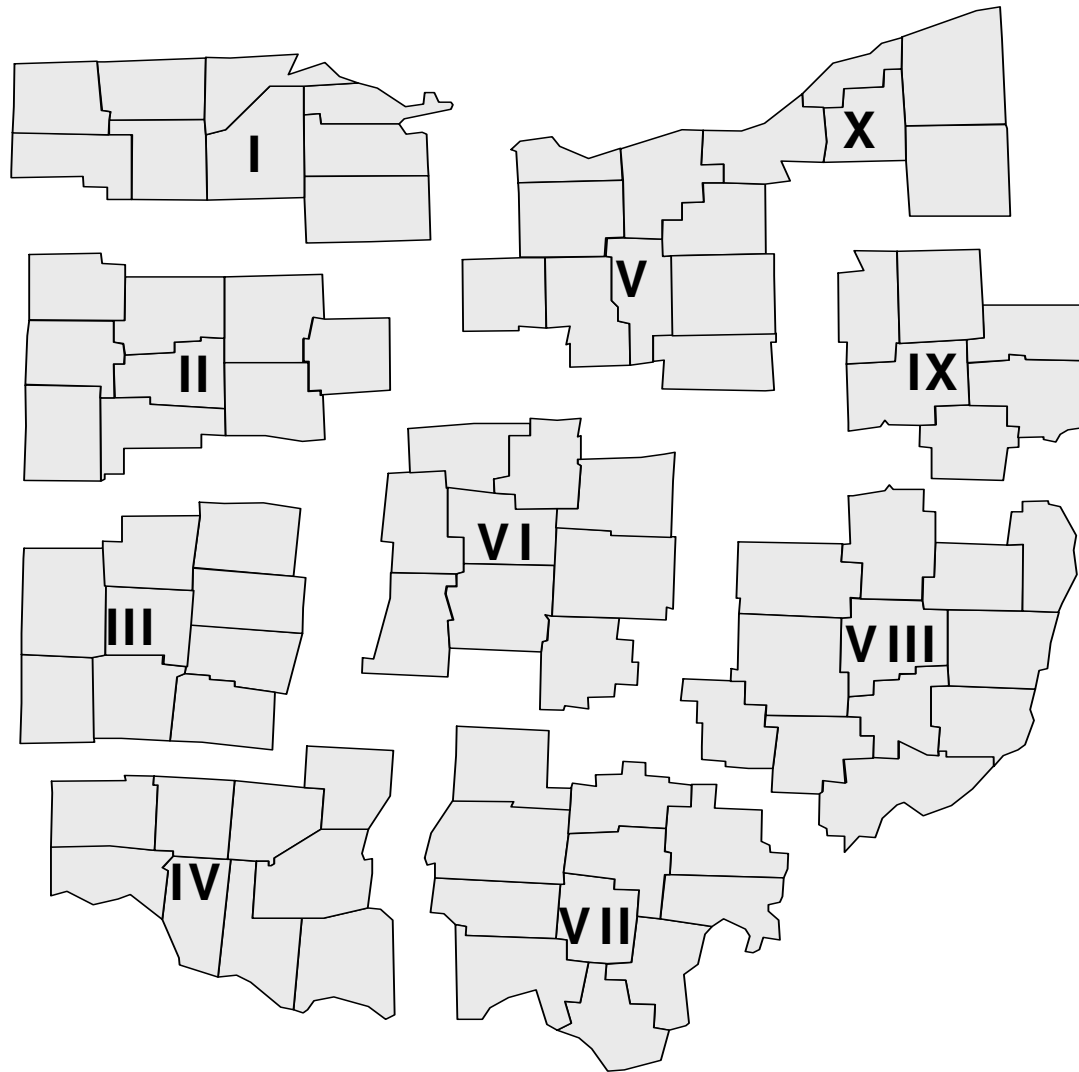
In Home Hearing Tests for Lost to Follow-up

EHDI Conference March 2009

Regional Infant Hearing Program

- Ohio has 10 regional programs
- Funding provided by a grant from Ohio Department of Health – EI Part C Funds
- Follow-up and tracking for infants not passing UNHS
- Family intervention for those with confirmed hearing loss

Ohio's Regional Infant Hearing Programs



RFP Issued Through the Ohio Department of Health

- Problem: Ohio infants who do not pass their newborn hearing screenings are not receiving timely diagnostic audiology follow-up.
- Need: To enhance access to diagnostic audiologic evaluation so that infants who do not pass UNHS at birth are seen by audiologists prior to 3 months of age.

Qualified Bidders

General Requirements

- Familiarity with UNHS
- Pediatric audiologist competent in performing physiological evaluations
- Equipment necessary to carry out recommended test battery
- Written plan describing how follow-up diagnostic audiology services will be increased in the proposed geographic area as well as showing a need for these services

Contract Awarded to Region IX

**“ Enhancing
The Audiologic Evaluation Process
for Infants Not Passing
Universal Newborn Hearing
Screening”**

Region IX Lost to Follow-up

- Highest in most populated areas
- Sufficient access to pediatric audiologists
- Portion of families agreed to further testing, but did not comply
- Portion of families eventually completed testing and enrolled in intervention
- Hearing loss still identified by Ed Aud during preschool or Kindergarten screening

Home Testing Possibilities

- Could we increase number of children diagnosed early with hearing loss and decrease the numbers of lost to follow-up?
- If we tested in the home and the child had a hearing loss, with our continued support, would the family go on for further testing, hearing aids and intervention in a timely manner?
- Could we reduce risk factors by offering home testing?

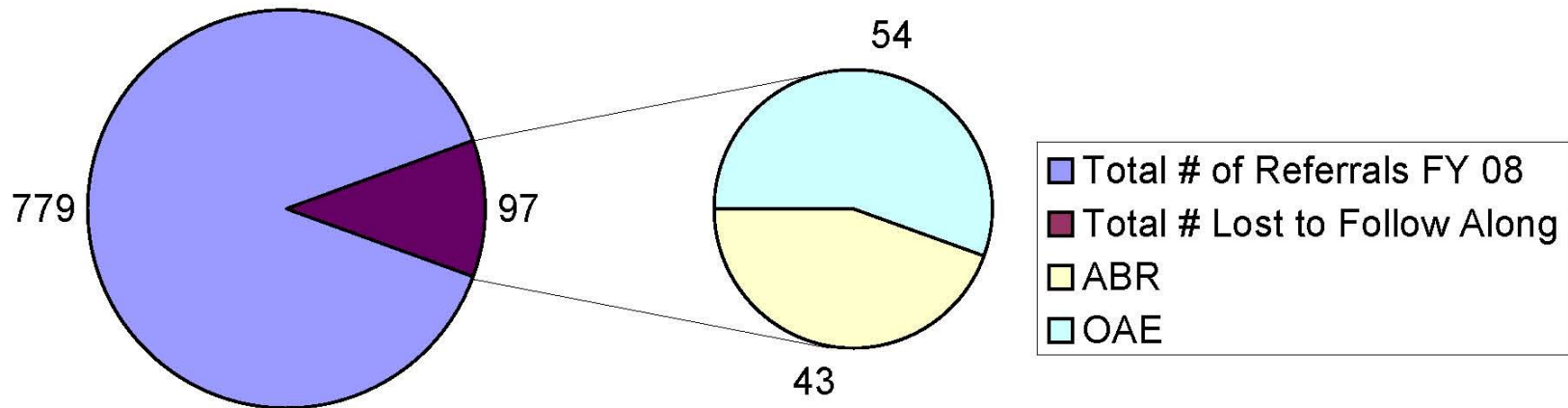
UNHS Follow-up and Tracking Protocol

- UNHS Referral Received
- Contact Help Me Grow
- First call to family within 2 working days
- If contact by phone cannot be made following at least 3 attempts, a letter is mailed
- If no response from family after 30 days, a second letter is mailed to the family and the physician on file.
- If there is no contact within 30 days of mailing the 2nd letter, the case is closed.

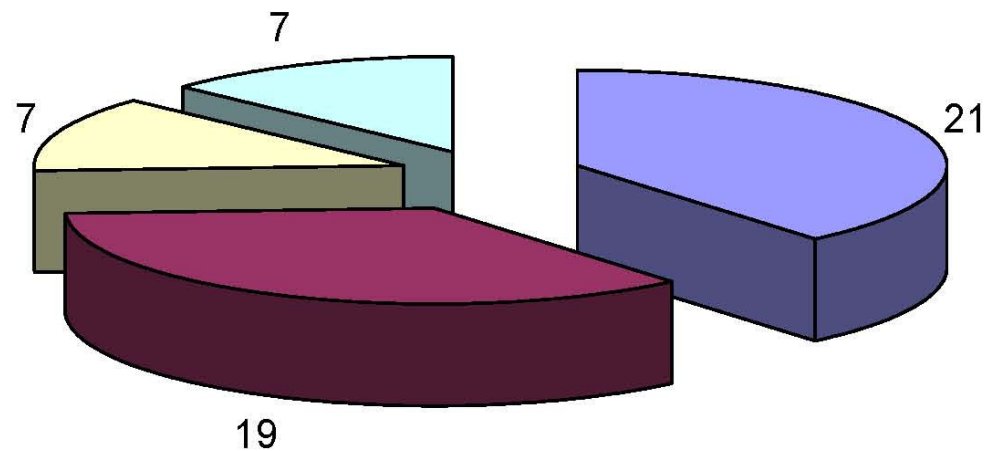
In Home Testing

- Closed files contacted for in home testing
- Second phone call of UNHS protocol, in home testing offered
- Currently in home testing offered immediately if no transportation or insurance

Universal New Born Hearing Screening Referrals FY 08



Home Test Calls Made During FY 08 Lost To Follow Along



■ No contact information available

■ Messages left, no return call from parent

■ Contact made, parent declined follow up testing/home testing

■ Home test scheduled and completed

In Home Testing Program

- High Frequency Tympanometer
- DPOAE
- ABR; must repeat if previous screening was ABR, protocol is for under 6 months of age

Potential Risk Factors for Late Hearing Aid Fitting and Loss to Follow-up (Spivak et al. 2008)

- Nursery Type
- Distance of the Follow-up Facility from Home
- Degree of Hearing Loss
- Type of Insurance
- Age of Diagnosis
- Type of Hearing Loss
- Laterality of Hearing Loss

Potential Risk Factors

- Nursery Type
 - Well Baby: 16
 - NICU: 2
 - Unknown: 1 (foster child)
- Distance of the Follow-up Facility

Potential Risk Factors

- Type of Insurance
 - Medicaid: 15
 - Private Insurance: 4
- Laterality of Hearing Loss
 - Unilateral Referral: 11
 - Bilateral Referral: 7
 - Unknown: 1 (Foster care)

Family Risk Factors (Prince et al. 2003 & ASHA)

- More than 2 children at home
- Mother had no or late prenatal care
- Mother was a substance abuser
- Mother smoked during pregnancy
- Infant underwent surgery during neonatal period
- Infant had not been on a ventilator
- No family history of hearing loss
- Maternal educational level
- Age of mother
- Maternal marital status

Studies by Lui 2003 found similar results

Studies by Lui 2008 contradict some of these findings

Loss to Follow-up from Diagnosis to Intervention Found to be Higher Among:

(Lui et al. 2008)

- Infants weighing less than 2500 g at birth
- Infants with unilateral hearing loss
- Infants with mild/moderate hearing loss

Completed Home Test Data

- Parent Marriage Status

- Married: 8
- Single: 10
- Unknown: 1 (Foster)

- Parent Age

- <18: 1
- 18-24: 10
- 25-30: 1
- 31-35: 2
- 36-40: 1
- Unknown: 4

Completed Home Test Data

- Highest Level Education
 - Did not complete high school: 6
 - High school diploma: 7
 - GED: 1
 - College degree: 4
 - Unknown: 1

Parent Reasons for No Follow-up

- Doctor did not mention UNHS test: 47%
- General lack follow-up: 37%
- Parents told testing often inaccurate, not to worry: 21%
- No insurance: 11%
- No transportation: 32%
- Parents did not know child didn't pass UNHS: 21%

Beyond Home Test

- 2 Help Me Grow referrals made for developmental concerns
- 3 children referred for fluid, 2 still in treatment process

Follow-up with Medical Home

- Letter sent to doctor with home test results
 - Explains RIHP
 - States that 1/10 babies lost to follow-up will have a hearing loss
 - Early identification; critical neurological window of time for language development
 - AAP recommendations; hearing screening 1 mo., evaluation 3 mo., intervention 6 mo.
 - Families trust advise of physicians

Further Considerations

- Contacting physicians during initial phase of follow-up
- Graduate students assist in phone call volume and internet search for contact info